

# **Electric Utility Model Rates and Tariffs Affecting DER**

*Integration of RES and DER Conference  
European Commission – Research Directorate  
December 3, 2004  
Brussels, Belgium*

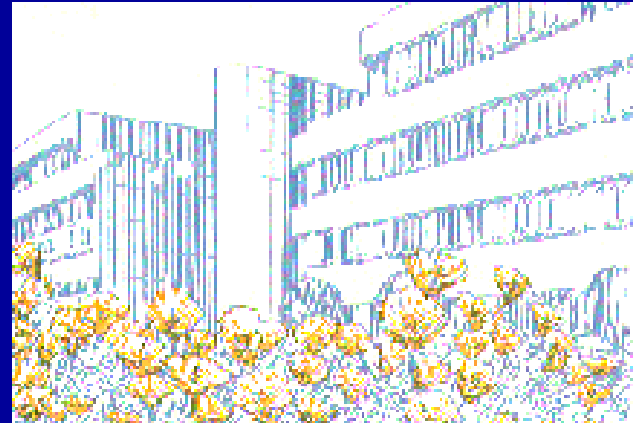


**Mark Rawson**

**California Energy Commission**

# California Energy Commission

- Energy policy and information advisor to the California governor and legislature.
- Major Functions:
  - License power plants
  - Promote energy efficiency and conservation.
  - Advance energy technologies.
  - Assess current and future energy trends.



# California is a Leader in Self-Generation

Distributed generation accounts for more than 2500 megawatts in California.

**Reliability**  
**Power Quality**  
**Cost Savings**



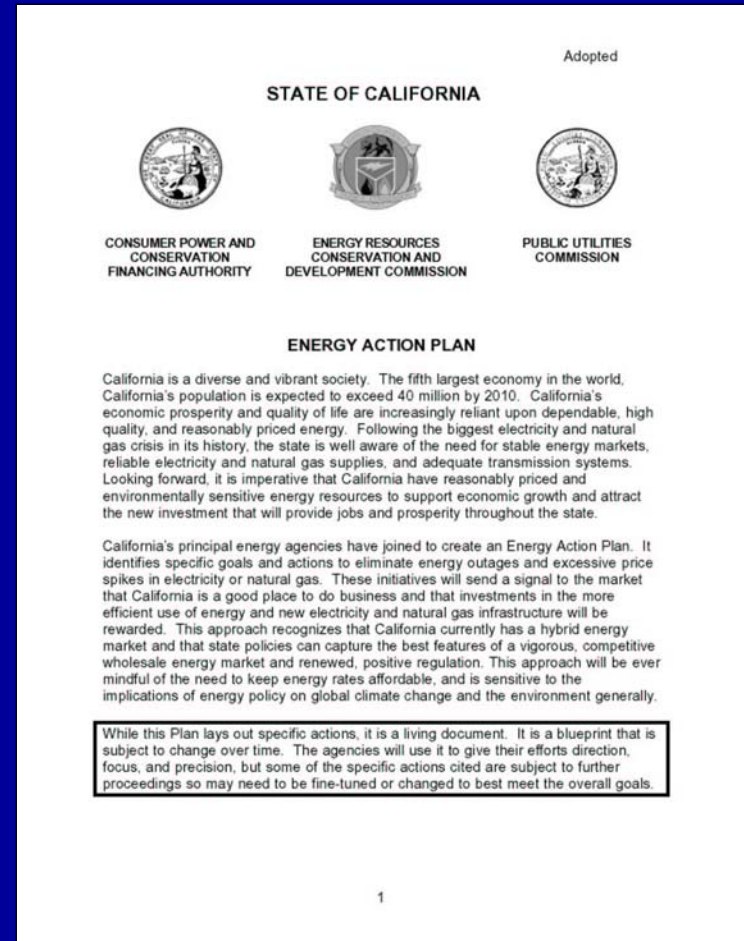
# DG is Part of California Action Plan

## Action Item 5:

### Promote Customer and Utility-owned Distributed Generation

Agencies will work together to:

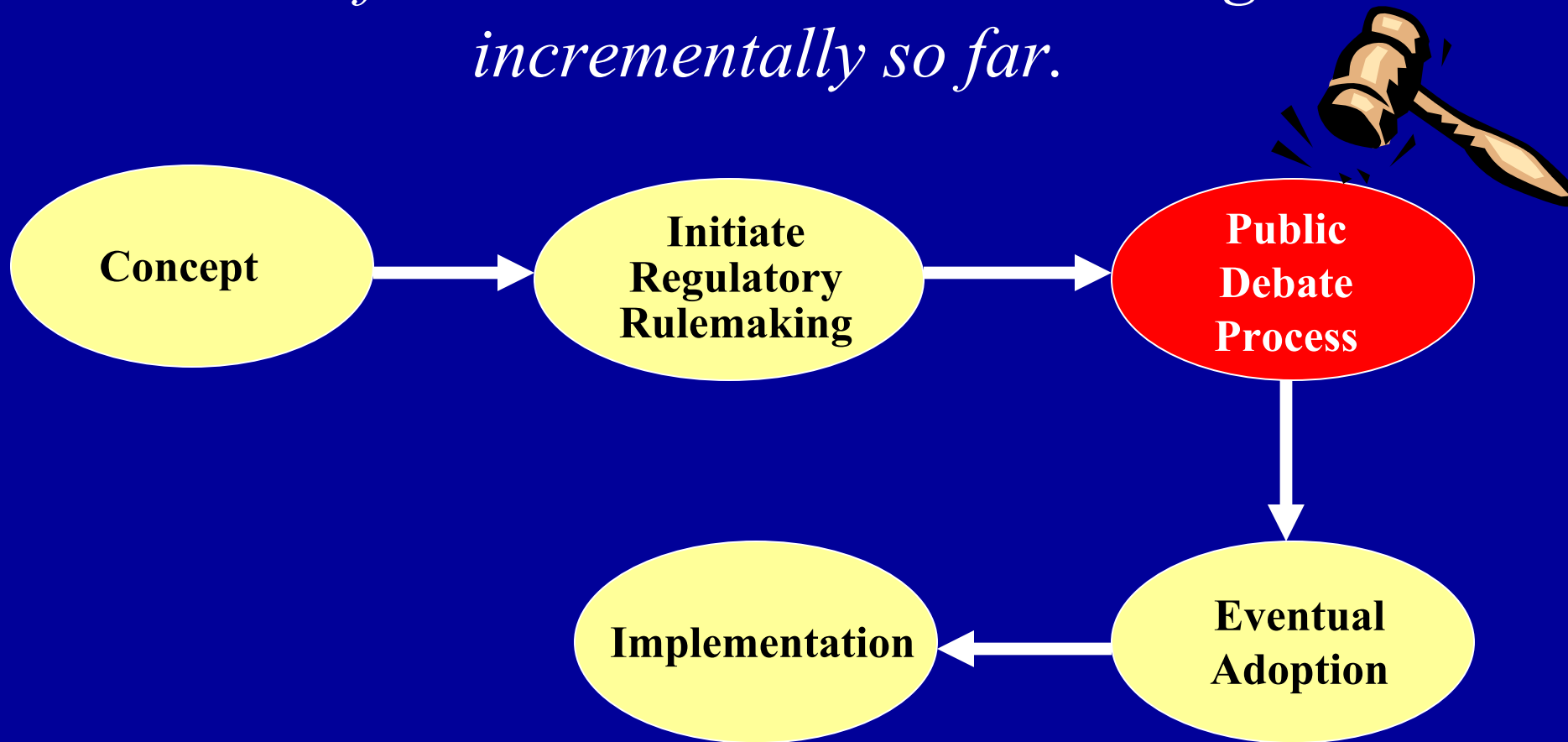
- Further develop DG policies
- Target R&D
- Track market adoption of DG
- Identify cumulative energy system impacts
- Examine issues associated with new technologies and their use.



[www.energy.ca.gov/energy\\_action\\_plan/index.html](http://www.energy.ca.gov/energy_action_plan/index.html)

# Traditional Rate Design Cycle

*California has dealt with rate design incrementally so far.*



*Rate Design Implementation Takes Time!*

# Recent Net Metering Legislation in California

## Assembly Bill 58 (2002)

- Extended expanded net metering program.
- Wind greater than 50 kw receives generation-only credit.
- Public purpose program charges apply.
- Utilities required to interconnect within 30 business days of complete application.
- Aggregated limit to net metered MW equals  $\frac{1}{2}$  of 1% of system-wide peak demand.

## Assembly Bill 1X29 (2001)

- Temporary expanded net metering program to 1 MW from 10 kw.

## Assembly Bill 2228 (2002)

- Net Metering for biogas.

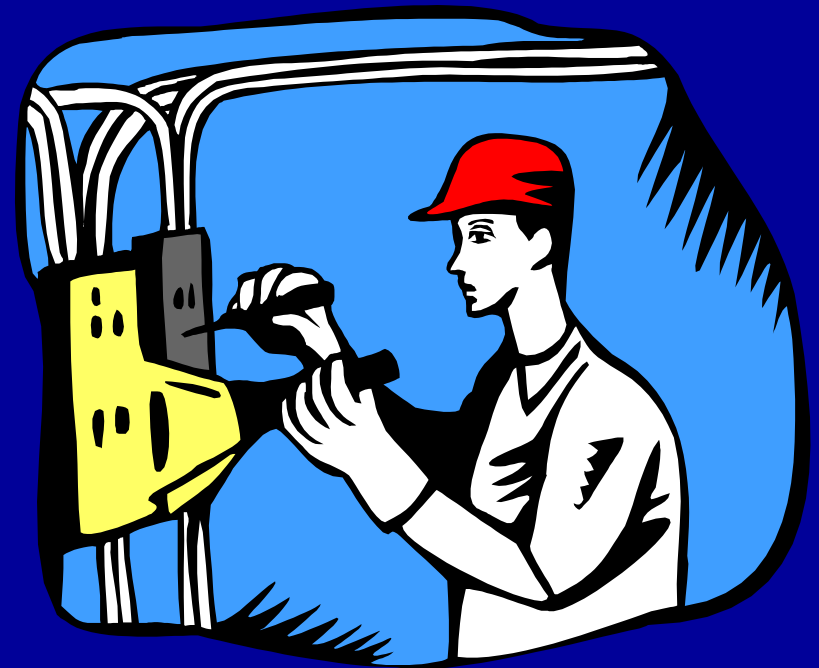
## Assembly Bill 1214 (2003)

- Net Metering for fuel cells.



# California Standby Rate Design Policies for Distributed Generation

- DG customers can avoid standby charges if it provides utility with physical assurance
- It is appropriate to recover distribution infrastructure costs from backup customers
- Public purpose costs should continue to be collected from standby customers
- Charges should recover fixed costs through reservation charges and variable costs through usage charges



# DG Standby Rate Design Has Progressed Slowly in California



- Utilities submitted DG rate design applications in September 2001
- No action taken through most of 2002, eventually rejecting utility proposals
- CPUC instead decided to incorporate rate design proposals into utility general rate design proceedings
- Unclear when final resolution will occur
- Exemptions are available for CHP and “ultra clean and low emission” DG (e.g., PV, wind, etc.)






# Departing Load Exit Fees and Exemptions

- Ratepayers currently paying off debt incurred for power purchases made during 2001 energy crisis
- Load departing the utility service via DG required to still pay
- Complete exemption of ~ 2.7 cents/kWh for net metering customers below 1 MW which includes PV, renewables
- Partial exemption of ~ 2.3 cents/kWh for departing load defined as “ultra clean and low emissions”
- Exemptions capped to 3,000 MW initially

Megawatt Cap Values Under CMS Proceeding - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address [http://www.energy.ca.gov/erak\\_fees/megawatt\\_cap.html](http://www.energy.ca.gov/erak_fees/megawatt_cap.html)



Welcome to the **California Energy Commission**

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[Adopted Application](#)

[CPUC Proceeding # R02-01-011](#)

[Distributed Generation](#)

## Megawatt Cap Totals

Exemptions for Cost Responsibility Surcharge Fees for Deregulating Loads

**Total MW Cap = 3000 MW**

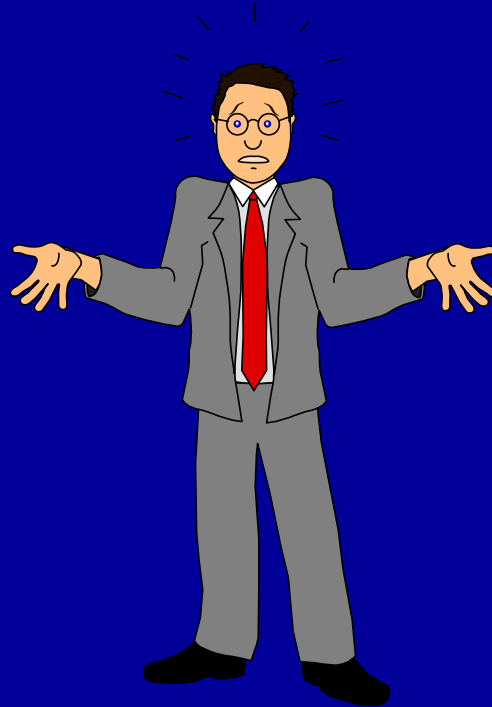
|                                 | Eligible for Full CRS Exemption | Eligible for Partial CRS Exemption | Eligible for Partial CRS Exemption |
|---------------------------------|---------------------------------|------------------------------------|------------------------------------|
| Cap Under Category              | NA                              | N/A                                |                                    |
| Reserved in CRS Exemption Queue | <b>111.07</b>                   | <b>0</b>                           | <b>109.01</b>                      |
| Available Under Cap             | N/A                             | N/A                                | <b>480.99</b>                      |
| Available UC/CSU Set Aside      | N/A                             | N/A                                | 10.00                              |

600 MW through 12/04  
1100 MW through 7/09  
1500 MW thereafter

Unrated October 19, 2004

[http://www.energy.ca.gov/exit\\_fees/megawatt\\_cap.html](http://www.energy.ca.gov/exit_fees/megawatt_cap.html)

**But are incremental/  
changes sufficient?**



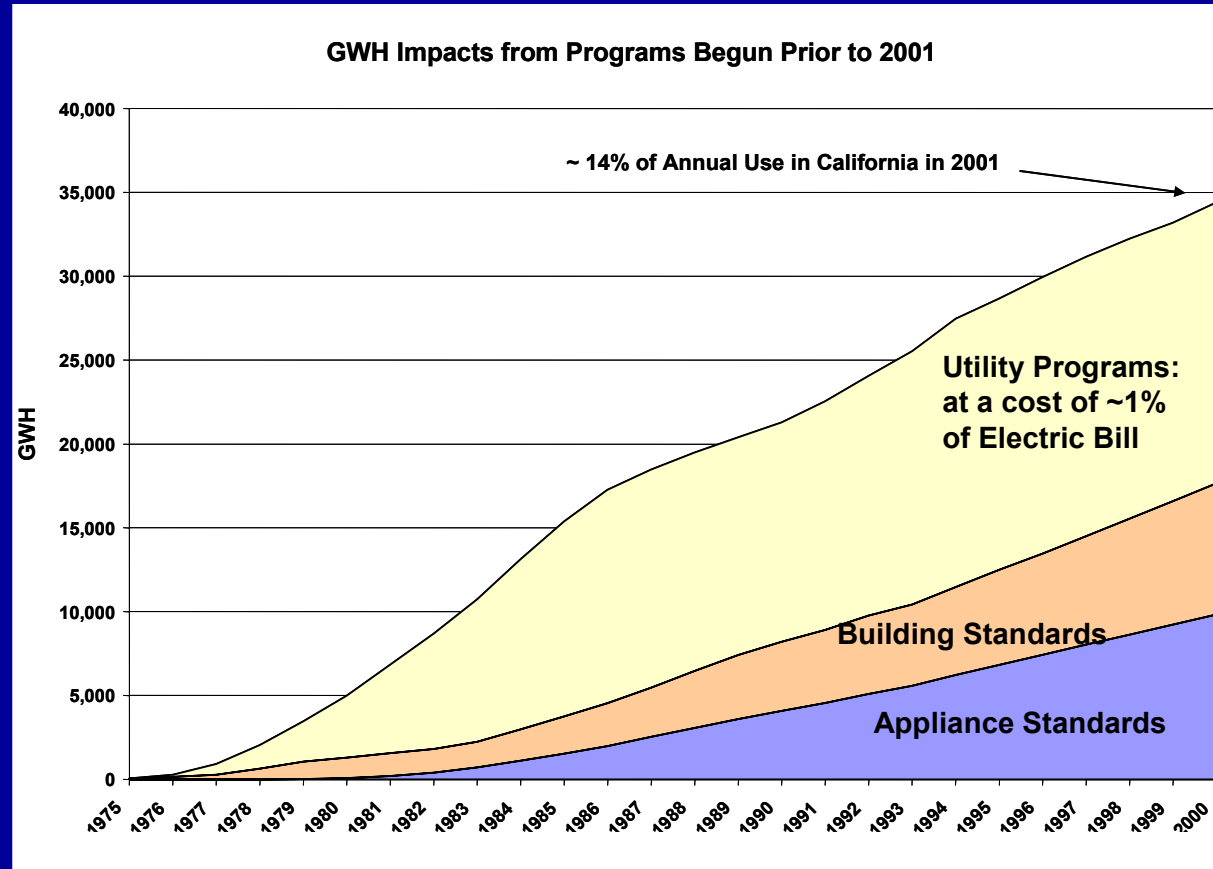
**And, are traditional ratemaking  
methods appropriate for DG?**



# Policy Needs to Unlock Other DER Benefits

*“Efficiency has been so successful in California because we figured out how to make it profitable for the utilities.”*

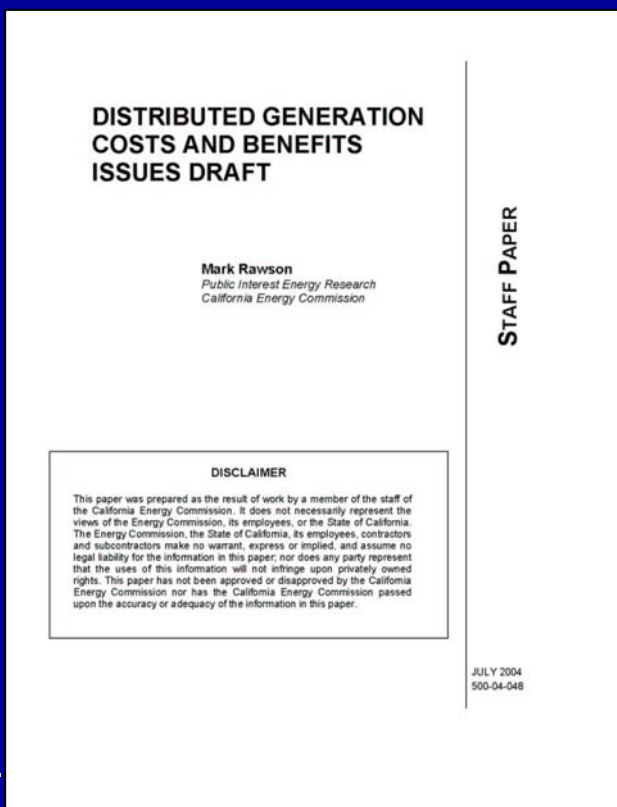
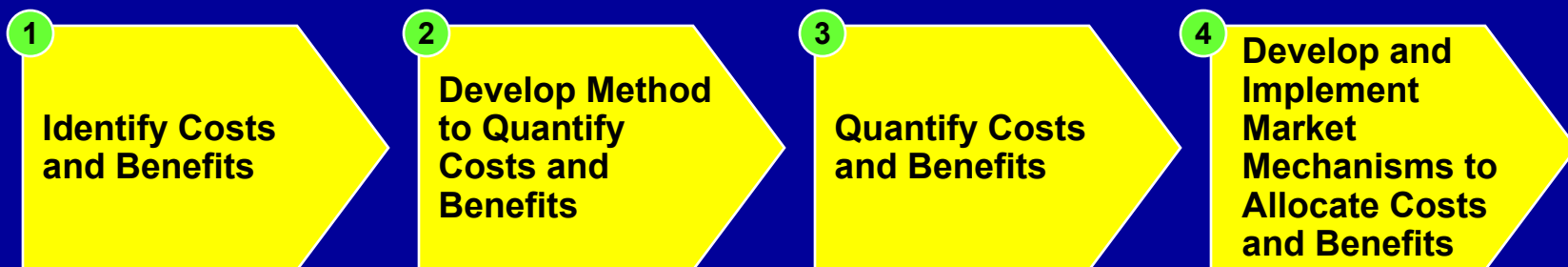
Commissioner Art  
Rosenfeld, October 2004



**We need to find winning business structures  
where all key stakeholders gain something**



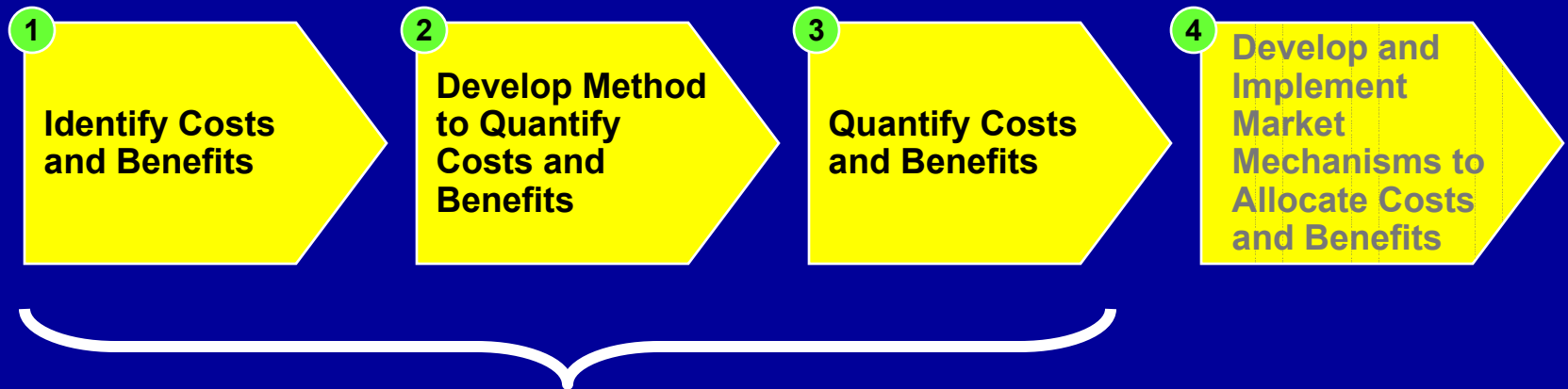
# Our Approach is to Link R&D to Policy



- Inventoried all research available on subject of costs and benefits
- Distilled issues pertinent to regulatory rulemaking process and laid out process for unlocking additional benefits DG
- Began structuring existing and planned research to support these steps
- Also began policy development in this sequence



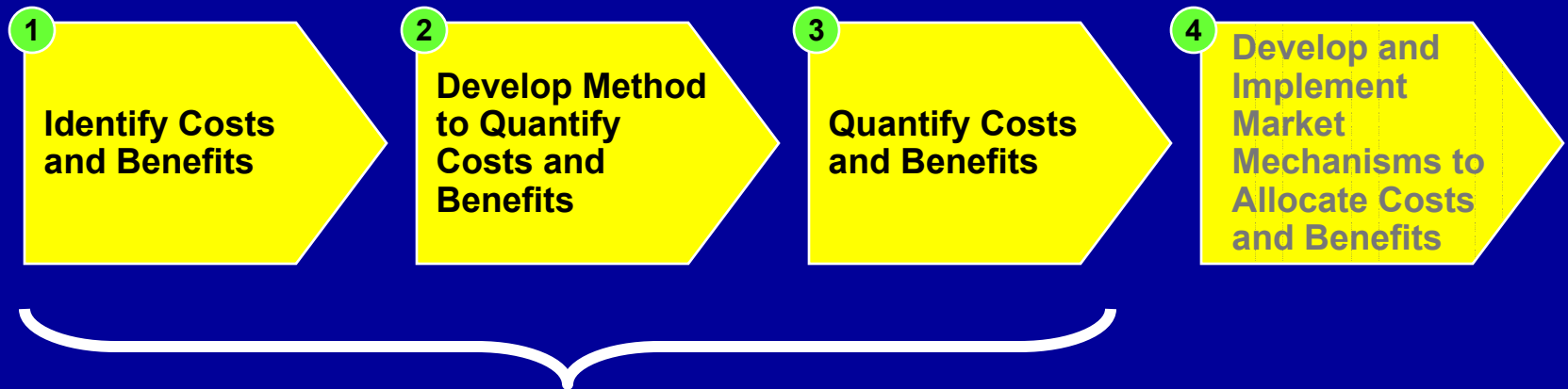
# Phase 1 Looking at Identification and Quantification



- Over \$ 7 million in research to identify utility system benefits of DG
- Developing tools and methodologies for identifying and quantifying value of utility system benefits
- Determining costs and benefits of DG to DG customer, utility, other ratepayers, society
- Research results are being fed into current regulatory efforts at CPUC to identify what costs and benefits should be the highest priority to quantify



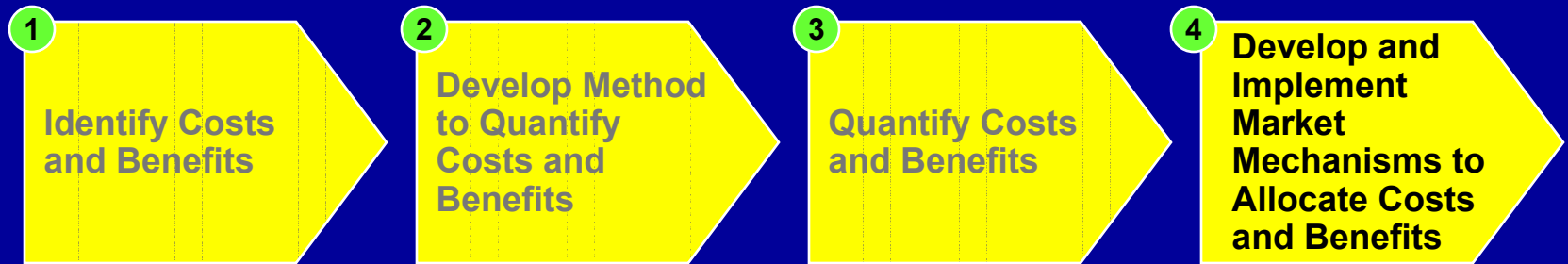
# What Have We Learned So Far...



- Attaining an acceptable process may require multiple iterations
- The ultimate market mechanisms should drive how we think about benefits and costs
- Benefits and costs need to be analyzed on a holistic basis across all stakeholders
- Applications are more important than technologies in understanding benefits
- Individual benefits and costs should be viewed on either a central or distributed basis



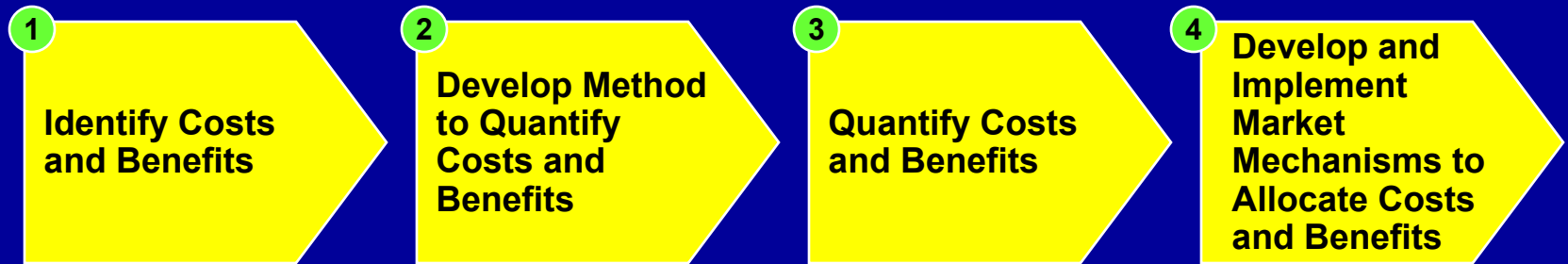
# Market Mechanisms is the End Game



- Conducting over \$750 thousand in research to identify best market mechanisms for unlocking these benefits
- Define market mechanisms as rates and tariffs, utility contracts, utility planning (e.g., RPS, distribution deferral, etc.), wholesale and retail markets, financial incentives, others.
  - SCE Distribution Deferral Pilot - IOUs already integrating DG into distribution planning process
- CPUC will integrate cost effective DG into utility planning and procurement process



# What is The Timeline?



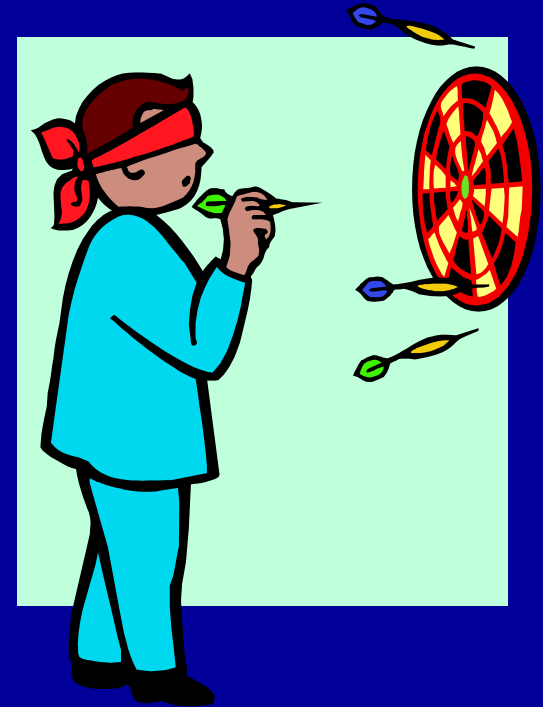
- Expect to have priority cost/benefits identified and methodology adopted by CPUC by mid 2005.
- CPUC will use method to judge suitability of DG for utility planning and procurement
- Next phase will be to look at other market mechanisms to unlock benefits such as wholesale and retail markets, technology rebates/Incentives, tax incentives and others





# Some Final Thoughts

- DG is critical piece of the energy solution in California and the U.S.
- With merchant generation and bulk transmission a major uncertainty, industry stakeholders, utilities, regulators, and policymakers must work toward the effective deployment of DG
- We need to provide incentives to the utilities as well as customers to implement DG
- Traditional school of thought about ratemaking is likely not appropriate for unlocking all of DG's benefits



# For Additional Information, Please Contact Me...

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California Energy Commission DG Website Resources

[www.energy.ca.gov/distgen](http://www.energy.ca.gov/distgen)

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# Additional Resources

| Title   | Topics  | Website  |
|---|---|--|
| Energy Commission<br>Investigation<br>04-DIST-GEN-1         | <ul style="list-style-type: none"><li>• Interconnection</li><li>• Distribution Planning</li><li>• Costs And Benefits</li><li>• Emerging DG Technologies</li></ul>                                 | <a href="http://www.energy.ca.gov/distgen_oii/index.html">www.energy.ca.gov/distgen_oii/index.html</a> |
| Public Utilities<br>Commission<br>Rulemaking<br>R.04.03.017 | <ul style="list-style-type: none"><li>• Costs And Benefits</li><li>• Utility Planning And Procurement</li><li>• Interconnection</li><li>• Incentives</li><li>• Emerging DG Technologies</li></ul> | <a href="http://www.cpuc.ca.gov/proceedings/R0403017.htm">www.cpuc.ca.gov/proceedings/R0403017.htm</a> |
| Energy Commission<br>DG Research Activities                 | <ul style="list-style-type: none"><li>• Renewable And Nonrenewable DG</li><li>• Utility System Impacts</li><li>• Integration In Markets</li></ul>   | <a href="http://www.energy.ca.gov/pier/index.html">www.energy.ca.gov/pier/index.html</a>               |

